ARTICLES

EMDR Therapy Humanitarian Assistance Programs: Treating the Psychological, Physical, and Societal Effects of Adverse Experiences Worldwide

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The negative effects of trauma and other adverse life experiences have been shown to interfere with individual, family, and societal functioning. Eye movement desensitization and reprocessing (EMDR) therapy is empirically supported and recommended as a frontline treatment for psychological trauma in numerous practice guidelines. It provides both effective and efficient treatment without the need for detailed descriptions of the disturbing event or homework. This allows field teams to provide culturally sensitive therapy on consecutive days for those in remote areas and in crisis situations. Humanitarian assistance organizations have conducted projects internationally to provide EMDR therapy after both natural and manmade disasters and have helped develop sustainable mental health resources worldwide. This brief introduction provides an overview of current programs, treatment rationale, and a call for future action.

Keywords: eye movement desensitization and reprocessing (EMDR) therapy; humanitarian assistance programs; trauma; adverse experiences; adaptive information processing model

he articles in this journal issue reveal the breadth of humanitarian assistance programs using eye movement desensitization and reprocessing (EMDR) therapy and the accomplishments made possible by the commitment of those who have offered their time, heart, and donations to the alleviation of suffering worldwide. The origin of these programs was a response to the 1995 Oklahoma City bombing, which had overwhelmed the capacity of local caregivers (Shapiro, 2012). A program evaluation indicated a treatment response rate that was comparable to the 84% remission of posttraumatic stress disorder (PTSD) within three sessions that was obtained in rigorous research published in the same year (Wilson, Becker, & Tinker, 1995). Consequently, the nonprofit EMDR Humanitarian Assistance Programs (HAP) in the United States was formed to offer pro bono services as needed to those suffering from the trauma resulting from natural or manmade disasters (see Gelbach, 2014). Projects were initiated in the United States and globally in areas such as Asia, the

Middle East, and Latin America. The organization is now an international nongovernmental organization in special consultative status with the United Nations Economic and Social Council and has received an award for clinical excellence from the International Society for Traumatic Stress Studies.

The United States organization is currently called the Trauma Recovery/EMDR Humanitarian Assistance Programs (TR/HAP) to reflect both its worldwide mission and the many Trauma Recovery Networks (TRNs) that respond locally to those in need, such as after the Boston Marathon bombing, school shootings, hurricanes, and wildfires. An in-depth description of the local volunteerism involved in two TRN projects (see Alter-Reid, Colelli, & Simons, 2014) puts the interventions in clinical perspective, with specific suggestions for future projects. In addition, the description of humanitarian responses in Arabic countries throughout the Middle East first inaugurated by a HAP training in Palestine in 2005 (see Zaghrout-Hodali, 2014) brings to life the

importance of effective treatment for survivors of political violence, imprisonment, and torture with clinical descriptions of people treated in a refugee camp in Palestine, a Syrian refugee camp in Jordan, and from a war zone in Libya.

In the two decades since the initial response in Oklahoma, the expansion of EMDR therapy training worldwide has been paralleled by the inauguration of humanitarian associations based outside the United States. EMDR Europe Humanitarian Assistance Program (EMDR Europe HAP; see Farrell, 2014), national EMDR associations in Europe (see Fernandez, Callerame, Maslovaric, & Wheeler, 2014), and Trauma Aid/Humanitarian Assistance Program Germany (see Mattheß & Sodemann, 2014) have extended aid both locally and outside of Europe. Starting in 2007, despite many challenges, EMDR therapy training throughout Africa has been conducted by TR/HAP, Trauma Aid, EMDR Europe HAP, and members of various European EMDR national associations (see Zimmermann, 2014). In Asia, EMDR therapy training and treatment began in 1998 in response to calls for assistance after various natural disasters. Significantly, through the humanitarian projects and efforts of the United States and European-based organizations, many Asian national and regional associations have been created, and in 2010, we welcomed the establishment of EMDR Asia. Its members have assisted thousands of people through both training and disaster response (see Mehrotra, 2014). In 1998, members of the EMDR HAP in the United States responded to a call for collaboration after a hurricane in Mexico. Subsequent to this project, extensive humanitarian assistance throughout Latin America and the Caribbean has been provided by the Mexican Association for Mental Health Support in Crisis and the Latin American & Caribbean Foundation for Psychological Trauma Research, as well as HAP organizations from Argentina and Brazil (see Jarero, Artigas, Uribe, & Miranda, 2014).

Members of all of these organizations have provided pro bono EMDR therapy training and treatment to populations in need throughout the world. Consequently, the cross-cultural applicability of EMDR therapy is clear, with successful projects throughout Africa, Asia, the Caribbean, Europe, Latin America, the Middle East, and the United States. Project evaluations have demonstrated positive effects with both individual and group protocols (e.g., Aduriz, Bluthgen, & Knopfler, 2009; Fernandez, Gallinari, & Lorenzetti, 2004; Jarero, Artigas, & Hartung, 2006; Konuk et al., 2006; Silver, Rogers, Knipe, & Colelli, 2005; Zaghrout-Hodali, Alissa, & Dodgson, 2008; see

also Farrell, 2014; Jarero et al., 2014). In addition to crisis treatment, an emphasis is placed on building sustainable mental health treatment resources with local agencies. All projects are invited collaborations with close attention paid to cultural differences and psychosocial needs.

EMDR Therapy

Although initially viewed with skepticism, EMDR therapy has now been validated by more than two dozen randomized controlled trials (see http:// www.emdrhap.org/content/what-is-emdr/ research-findings/) and numerous meta-analyses (e.g., Bisson, Roberts, Andrew, Cooper, & Lewis, 2013; Watts et al., 2013). An additional 20 randomized trials and a recent meta-analysis (Lee & Cuijpers, 2013) have demonstrated the positive effects of the eye movements, including rapid declines in emotional distress. Importantly, EMDR therapy has been recommended as an empirically validated effective trauma treatment by a wide range of organizations, both domestically (e.g., Department of Veterans Affairs & Department of Defense, 2010; Substance Abuse and Mental Health Services Administration, National Registry of Evidence-Based Programs and Practices, 2011) and internationally (e.g., International Society for Traumatic Stress Studies; Foa, Keane, Friedman, & Cohen, 2009). According to the recent World Health Organization (WHO; 2013) Guidelines for the Management of Conditions Specifically Related to Stress, trauma-focused cognitive behavioral therapy (CBT) and EMDR therapy are the only psychotherapies recommended for children, adolescents, and adults with PTSD. As indicated in the WHO guidelines,

[EMDR] therapy is based on the idea that negative thoughts, feelings, and behaviours are the result of unprocessed memories. The treatment involves standardized procedures that include focusing simultaneously on (a) spontaneous associations of traumatic images, thoughts, emotions, and bodily sensations and (b) bilateral stimulation that is most commonly in the form of repeated eye movements. Like CBT with a trauma focus, EMDR aims to reduce subjective distress and strengthen adaptive cognitions related to the traumatic event. Unlike CBT with a trauma focus, EMDR does not involve (a) detailed descriptions of the event, (b) direct challenging of beliefs, (c) extended exposure, or (d) homework. (p. 1)

The WHO practice guidelines description underscores important implications for humanitarian treatment. Because EMDR therapy does not need homework, treatment can be delivered on consecutive days, which means that field teams can provide both effective and efficient relief to those in need, even in remote areas. Because detailed descriptions of the event are unnecessary, the therapy is also amenable to those in reticent societies and for those who may be otherwise unwilling to engage because of sexual abuse or war experiences that have left them feeling guilt or shame. As indicated by the Adaptive Information Processing (AIP) model (Shapiro, 1995, 2001, 2014; Solomon & Shapiro, 2008) that guides the clinical applications of EMDR therapy, unprocessed memories of negative events contain the emotions, physical sensations, and beliefs experienced at the time of the incident. These memories can be triggered by current situations, causing the encoded earlier perceptions to emerge and influence the individual's present reactions. The recognition that adverse life experiences are the basis of a wide range of pathology and other debilitating effects highlights the urgency of treating victims of trauma and other disturbing events. These unprocessed memories of adverse experiences are understood to affect both mental and physical health, as well as the ability to learn and the quality of personal and work relationships. In addition, the aftereffects of trauma can be transmitted across generations, resulting in ongoing cycles of violence and pain that affect individuals, families, and societies.

Interpersonal Effects of Unprocessed Trauma

As indicated by the AIP model, untreated trauma and other adverse life experiences have profound individual and interpersonal effects (Shapiro, 1995, 2001, 2014). Research has revealed grave and lasting consequences across the life span. Given the prevalence of traumatization generated worldwide by direct, natural, structural, and cultural violence (see Carriere, 2014), the need for timely trauma treatment is clear. Intergenerational effects include lack of bonding and disrupted attachment because of the anger, depression, anxiety, and fear inherent in the disorder. Unsurprisingly, research has indicated that mothers who have PTSD are more likely to maltreat their children (Chemtob, Gudiño, & Laraque, 2013). The implications of this fact are profound when one considers research demonstrating that "harsh physical punishment [i.e., pushing, grabbing, shoving, slapping, hitting in the absence of [more severe] child maltreatment is associated with mood disorders, anxiety disorders, substance abuse/ dependence, and personality disorders in a general population sample" (Afifi, Mota, Dasiewicz, MacMillan, & Sareen, 2012, p. 1). Other research has revealed a positive correlation between various forms of maltreatment and psychotic symptoms in children (Arseneault et al., 2011; Varese et al., 2012). Research has also indicated that "discordance in psychotic illness across related individuals can be traced to differential exposure to trauma" (Heins et al., 2011, p. 1286). In sum, although predisposing genetic factors may be involved, "contrary to long-held beliefs among biologically oriented researchers and clinicians, the etiology of psychosis and schizophrenia are just as socially based [e.g., early-life adversity] as are non-psychotic mental health problems such as anxiety and depression" (Read, Fosse, Moskowitz, & Perry, 2014, p. 73). Given the general impairment and potential for aggression and violence in this population (Douglas, Guy, & Hart, 2009), the individual, familial, and societal risk factors are clear. All of this research indicates the need for effective and efficient treatments such as EMDR therapy to address both present and intergenerational traumatization. Fortunately, EMDR therapy has also been demonstrated in preliminary research to successfully reduce both PTSD and auditory hallucinations in those suffering from psychosis (van den Berg & van den Gaag, 2012).

The need for timely and effective treatment becomes even more pressing when considering the results of the Adverse Childhood Experiences (ACE) Study, which evaluated more than 17,000 participants and ". . . found a strong dose-response relationship between the breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several of the leading causes of death in adults" (Felitti et al., 1998, p. 251). These mortality risks included physically debilitating conditions such as ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease. The recognition that childhood traumatization can have lifelong mental and physical effects should be a major incentive for placing a spotlight on the global health crises confronting us all and to start comprehensively addressing them.

Societal Effects of Unprocessed Memories

As indicated in the article by Carriere (2014), it is vital that sufficient attention and resources be provided so that treatment can be given to the millions of people impacted globally. The detrimental effects of untreated trauma have grave societal implications.

Although numerous organizations are dedicated to offering services to assist low-income countries in their development and to advance educational goals, untreated mental health issues can severely hamper their attainment. For instance, the reported effects of trauma and other adverse experiences also include alcoholism, drug abuse, and depression (Felitti et al., 1998), which can clearly prevent people in crisesprone regions from taking advantage of the development opportunities (e.g., jobs, schooling, health services) offered by various United Nations agencies, civil society, donor agencies, and business enterprises. Addiction-trauma coping strategies interfere with positive motivations and contribute to anger and aggression. These, in turn, have important societal implications because widespread and unrelieved traumatization can foster both familial dysfunction and a pervasive culture of distrust and discord.

Viewed through the lenses of the AIP model, unprocessed memories have also contributed to generations of ongoing violence fueled by the distrust, anger, pain, fear, and hypervigilance inherent in traumatization. In addition to these effects on the individuals most directly involved, the retelling of previous humiliations and physical assaults can result in vicarious traumatization for ensuing generations (e.g., Bombay, Matheson, & Anisman, 2013). Children are not only affected by their parents' distress, but in hearing such stories, they can picture themselves as having experienced the historical trauma and react accordingly. As indicated by the AIP model, any subsequent reminders of the trauma can trigger the negative emotions, physical sensations, and beliefs engendered by the event and color the perception of the present. This may result in ongoing antagonism toward "others"—ethnic, religious, racial, class, or caste groups—designated as adversaries because of historical trauma (e.g., Bombay, Matheson, & Anisman, 2014). Attempts to mediate peaceful solutions can also be hampered by these automatic responses because the evaluation of other people "at the table" is colored by the anger, fear, humiliation, and shame instilled by past experiences. In addition, mediators, service providers, disaster relief workers, and peacekeepers can be psychologically impaired because of vicarious traumatization from the detailed descriptions of past events. As indicated in numerous studies, the automatic effects from unresolved traumas can be resolved through the standard EMDR therapy protocols (Shapiro, 2001), which target (a) past events, (b) current situations that trigger negative responses, and (c) needed skills for future adaptive functioning.

Importantly, research has also indicated that those with PTSD have difficulty disengaging from threatening cues (Pineles, Shipherd, Mostoufi, Abramovitz, & Yovel, 2009), which would clearly hamper those attempting to mediate positive solutions. Fortunately, preliminary research (El Khoury-Malhame et al., 2011) has indicated that EMDR therapy can result in a normalization and elimination of the negative attentional bias. Although more research is needed, these findings indicate that the availability of timely and effective trauma treatment may assist in bringing about reconciliation, peaceful coexistence, and the potential for nonviolent development. This further underscores the need to increase efforts to provide mental health services that address the debilitating effects of trauma through expanded care opportunities, comprehensive collaborative efforts, and supporting research (Carierre, 2014).

Commitment to Action

Over the last two decades, volunteers in the various EMDR humanitarian assistance programs have dedicated themselves to the alleviation of suffering in underserved populations worldwide. They have recognized that the fear, depression, anxiety, anger, and pain from unprocessed trauma experiences have debilitating effects on the individual that can derail any hope of a happy and productive life. They also recognize the negative impact on families, as the individual's pain can result in domestic violence and the intergenerational transfer of dysfunction through inadequate bonding, aggression, or withdrawal. This awareness has motivated them to reach out to those in underserved areas throughout the world, both in their home countries and abroad. And finally, they have recognized the societal impact, including the unending pain caused by generation after generation of ethnopolitical violence. This has motivated them to offer EMDR training and treatment in locations such as Northern Ireland, the Balkans, and the Middle East in the hopes of aiding reconciliation and peace.

These dedicated volunteers recognize that trauma can be effectively and efficiently treated, and they have committed themselves to bringing healing to those in need. They have done so tirelessly and with the determination that no one should be left behind. They recognize that effective mental health treatment should be available to all and not merely those in the more affluent regions of developed countries. We honor them as well as those who have supported the projects through their donations and those who have helped open the doors to timely treatment by

establishing the efficacy of EMDR therapy through their dedication to rigorous research. This anniversary issue of the *Journal of EMDR Practice and Research* provides readers an overview of the healing accomplished through these humanitarian projects and an incentive to do whatever is needed to expand outreach to the millions more in needless suffering worldwide.

References

- Aduriz, M. E., Bluthgen, C., & Knopfler, C. (2009). Helping child flood victims using group EMDR intervention in Argentina: Treatment outcome and gender differences. *International Journal of Stress Management*, 16, 138–153.
- Afffi, T. O., Mota, N. P., Dasiewicz, P., MacMillan, H. L., & Sareen, J. (2012). Physical punishment and mental disorders: Results from a nationally representative US sample. *Pediatrics*, *130*(2), 184–192. http://www.dx.doi.org/10.1542/peds.2011-2947
- Alter-Reid, K., Colelli, G., & Simons, N. (2014). When disaster strikes our local communities: U.S. EMDR trauma recovery network coordinators reflect on lessons learned. *Journal of EMDR Practice and Research*, 8(4), 205–214.
- Arseneault, L., Cannon, M., Fisher, H. L., Polanczyk, G., Moffitt, T. E., & Caspi, A. (2011). Childhood trauma and children's emerging psychotic symptoms: A genetically sensitive longitudinal cohort study. *Am J Psychiatry*, 168, 65–72.
- Bisson, J., Roberts, N. P., Andrew, M., Cooper, R., & Lewis, C. (2013). Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults. *Cochrane Database of Systematic Reviews*, (12), CD003388. http://www.dx.doi.org/10.1002/14651858.CD003388.pub4
- Bombay, A., Matheson, K., & Anisman, H. (2013). The intergenerational effects of Indian residential schools: Implications for the concept of historical trauma. *Transcultural Psychiatry*, 51(3), 320–338.
- Bombay, A., Matheson, K., & Anisman, H. (2014). Appraisals of discriminatory events among adult offspring of Indian residential school survivors: The influences of identity centrality and past perceptions of discrimination. Cultural Diversity and Ethnic Minority Psychology, 20, 75–86.
- Carriere, R. (2014). Scaling up what works: Using EMDR to help confront the world's burden of traumatic stress. *Journal of EMDR Practice and Research*, 8(4), 187–195.
- Chemtob, C. M., Gudiño, O. G., & Laraque, D. (2013). Maternal posttraumatic stress disorder and depression in pediatric primary care: Association with child maltreatment and frequency of child exposure to traumatic events. *JAMA Pediatrics*, 167(11), 1011–1018.
- Department of Veterans Affairs & Department of Defense (2010). VA/DoD clinical practice guidelines for the management of posttraumatic stress. Washington, DC: Veterans

- Health Administration, Department of Veterans Affairs and Health Affairs, Department of Defense.
- Douglas, K. S., Guy, L. S., & Hart, S. D. (2009). Psychosis as a risk factor for violence to others: A meta-analysis. *Psychological Bulletin*, *135*(5), 679–706.
- El Khoury-Malhame, M., Lenteaume, L., Beetz, E. M., Rogues, J., Reynaud, E., Samuelian, J. C., . . . Khalfa, S. (2011). Attentional bias in post-traumatic stress disorder diminishes after symptom amelioration. *Behaviour Research and Therapy*, 49(11), 796–801.
- Farrell, D. (2014). Developing EMDR therapy in Pakistan as part of a humanitarian endeavour. *Journal of EMDR Practice and Research*, 8(4), 233–239.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245–258.
- Fernandez, I., Callerame, C., Maslovaric, G., & Wheeler, K. (2014). EMDR Europe humanitarian programs: Development, current status, and future challenges. *Journal of EMDR Practice and Research*, 8(4), 215–224.
- Fernandez, I., Gallinari, E., & Lorenzetti, A. (2004). A school-based EMDR intervention for children who witnessed the Pirelli building airplane crash in Milan, Italy. *Journal of Brief Therapy*, *2*, 129–136.
- Foa, E. B., Keane, T. M., Friedman, M. J., & Cohen, J. A. (Eds.). (2009). Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies (2nd ed.). New York, NY: Guilford Press.
- Gelbach, R. (2014). EMDR humanitarian assistance programs: Twenty years and counting. *Journal of EMDR Practice and Research*, 8(4), 196–204.
- Heins, M., Simons, C., Lataster, T., Pfeifer, S., Vermissen, D., Lardinois, M., . . . Myin-Germeys, I. (2011). Childhood trauma and psychosis: A case-control and case-sibling comparison across different levels of genetic liability, psychopathology, and type of trauma. *Am J Psychiatry*, 168(12), 1286–1294.
- Jarero, I., Artigas, L., & Hartung, J. (2006). EMDR integrative group treatment protocol: A post-disaster trauma intervention for children and adults. *Traumatology*, *12*, 121–129.
- Jarero, I., Artigas, L., Uribe, S., & Miranda, A. (2014).
 EMDR therapy humanitarian trauma recovery interventions in Latin America and the Caribbean. *Journal of EMDR Practice and Research*, 8(4), 260–268.
- Konuk, E., Knipe, J., Eke, I., Yuksek, H., Yurtsever, A., & Ostep, S. (2006). The effects of EMDR therapy on post-traumatic stress disorder in survivors of the 1999 Marmara, Turkey earthquake. *International Journal of Stress Management*, 13, 291–308.
- Lee, C. W., & Cuijpers, P. (2013). A meta-analysis of the contribution of eye movements in processing emotional memories. *Journal of Behavior Therapy and Experimental Psychiatry*, 44, 231–239.

- Mattheß, H., & Sodemann, U. (2014). Trauma-Aid, Humanitarian Assistance Program Germany. *Journal of EMDR Practice and Research*, 8(4), 225–232.
- Mehrotra, S. (2014). Humanitarian projects and growth of EMDR therapy in Asia. *Journal of EMDR Practice and Research*, 8(4), 252–259.
- Pineles, S. L., Shipherd, J. C., Mostoufi, S. M., Abramovitz, S. M., & Yovel, I. (2009). Attentional biases in PTSD: More evidence for interference. *Behaviour Research and Therapy*, 47(12), 1050–1057.
- Read, J., Fosse, R., Moskowitz, A., & Perry, B. (2014). The traumagenic neurodevelopmental model of psychosis revisited. *Neuropsychiatry*, 4(1), 65–79.
- Shapiro, F. (1995). Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures. New York, NY: Guilford Press.
- Shapiro, F. (2001). Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures (2nd ed.). New York, NY: Guilford Press.
- Shapiro, F. (2012). EMDR humanitarian assistance programs: Building sustainable mental health resources worldwide. *Stress Points*, 12, 2–3.
- Shapiro, F. (2014). The role of eye movement desensitization and reprocessing (EMDR) therapy in medicine: Addressing the psychological and physical symptoms stemming from adverse life experiences. *The Permanente Journal*, 18, 71–77.
- Silver, S. M., Rogers, S., Knipe, J., & Colelli, G. (2005). EMDR therapy following the 9/11 terrorist attacks: A community-based intervention project in New York City. *International Journal of Stress Management*, 12, 29–42.
- Solomon, R. W., & Shapiro, F. (2008). EMDR and the adaptive information processing model: Potential mechanisms of change. *Journal of EMDR Practice and Re*search, 2, 315–325.
- Substance Abuse and Mental Health Services Administration, National Registry of Evidence-Based Programs and Practices. (2011). Eye movement desensitization and

- reprocessing. Retrieved from http://nrepp.samhsa.gov/ ViewIntervention.aspx?id=199
- van den Berg, D. P. G., & van den Gaag, M. (2012). Treating trauma in psychosis with EMDR: A pilot study. Journal of Behavior Therapy and Experimental Psychiatry, 43, 664–671.
- Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., . . . Bentall, R. P. (2012). Childhood adversities increase the risk of psychosis: A meta-analysis of patient-control, prospective- and cross-sectional cohort studies. *Schizophrenia Bulletin*, 38(4), 661–671.
- Watts, B. V., Schnurr, P. P., Mayo, L., Young-Xu, Y., Weeks, W. B., & Friedman, M. J. (2013). Meta-analysis of the efficacy of treatments for posttraumatic stress disorder. *Journal of Clinical Psychiatry*, 74(6), e541–e550. http://dx.doi.org/10.4088/JCP.12r08225
- Wilson, S., Becker, L. A., & Tinker, R. H. (1995). Eye movement desensitization and reprocessing (EMDR): Treatment for psychologically traumatized individuals. Journal of Consulting and Clinical Psychology, 63, 928–937.
- World Health Organization. (2013). Guidelines for the management of conditions specifically related to stress. Geneva, Switzerland: Author.
- Zaghrout-Hodali, M. (2014). Humanitarian work using EMDR in Palestine and the Arab world. *Journal of EMDR Practice and Research*, 8(4), 248–251.
- Zaghrout-Hodali, M., Alissa, F., & Dodgson, P. W. (2008). Building resilience and dismantling fear: EMDR group protocol with children in an area of ongoing trauma. *Journal of EMDR Practice and Research*, 2, 106–113.
- Zimmermann, E. (2014). EMDR humanitarian work: Providing trainings in EMDR therapy to African clinicians. *Journal of EMDR Practice and Research*, 8(4), 240–247.

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